

Very Low Mass Stars and Brown Dwarfs using 2MASS and DENIS

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2MASS and DENIS will increase the number of known very low mass stars by a substantial fraction. About 10,000 stars at the hydrogen-burning limit ($9 < M(K') < 10.5$ mag) will be cataloged by 2MASS, compared to the total of around 10-100 such stars known now. Such stars can be detected with high completeness by 2MASS out to a distance of 50-100 pc, as compared to the current completeness out to 5-10 pc.

Evidence from the *protocamera* data processed and examined to date show that roughly 1 source is found in every square degree that has no counterpart on a POSS 1 plate. The first of these sources was found to be a binary system with component stars of roughly equal brightness having an **M6-M7** combined spectrum.

2MASS and DENIS have the possibility of detecting brown dwarfs, depending on the brown dwarf mass and age distribution functions. There could be as many as 1,000 brown dwarfs detected in these surveys, but only if there is a large amount of "missing mass" in the solar neighborhood which is all concentrated in nearby brown dwarfs that are both warm and young. [It is possible that no brown dwarfs will be detected by either survey, in which case limits of 0.01 - 0.1 times the maximum missing mass will be placed on the maximum possible density of brown dwarfs over roughly half the allowable mass and age range.